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WHAT IS RESPONSIBLE FOR THE RISING SUICIDE RATE?

The problem of suicide is receiving more and more public attention. It is appalling to think that almost 20,000 persons kill themselves in the United States each year and the number is increasing. Not only is the press filled daily with reports of suicide, striking often because of the distinction of the persons involved, but the situation is the more serious since it affects ever-increasing numbers of people in all classes of society. The community is becoming greatly concerned at this distressing wastage of valuable human life and many are thinking how to reduce this unnecessary loss.

Not only is the public interest striving to prevent suicide; it is likewise seeking an explanation of the rising deathrate due to this cause. To many, the current increase in the amount of suicide is simply the effect of the economic depression. The statisticians of this company have studied this problem for a number of years, however, and are convinced that this explanation, while plausible, is not the complete one. It is, of course, true that the difficulties in which multitudes of people now find themselves can be attributed to the results of unemployment and of general financial upheaval. But many other factors which are generally overlooked are tied up with the state of mind which results in self-destruction. Suicide is a complex social phenomenon which reflects not only the environment in which a person finds himself, but to an equal extent, the character of the personality and the nature of the individual who is subjected to the ordinary or abnormal struggles and stresses of life. For one thing, the suicide rate increases very rapidly with age; it is much higher for males than for females; it varies greatly among the different races. It is these angles of the problem which have not received sufficient attention in current discussion.

In the first place, it should be noted that the suicide rate, now sharply increasing, began to rise as early as 1925 and has mounted steadily every year without exception since then. This period includes the feverishly prosperous years of 1927, 1928 and most of 1929. The most pronounced increase came between the years 1929 and 1930. There was only a slight increase in 1931. Disconcertingly high, however, as the rate is at the present time, the figures for the Industrial policyholders of the Metropolitan Life Insurance Company are still below what they were prior to the World War. In 1911, the first year for which we have statistics, the rate was 13.3, and, in 1913, it was 13.5 per 100,000. The rate among the insured is now about 11. The war years, on the other hand, it is interesting to observe, showed a declining suicide rate. A minimum was reached in 1920, when the figure was 6.1. There is little doubt but that the low figures for suicide during and immediately after the war, both here and throughout the world, reflected the intense interest which the great mass of the people had in living. So many things of great significance were happening that those who had personal difficulties of adjustment submerged them in order to meet the greater demands of their families, of their communities, and of their country. Life was, on the whole, a great adventure in those days and, in consequence, the suicide rate declined to minimal figures. It is thus clear that the recent upward trend in suicide, although undoubtedly accelerated by hard times, cannot be the result of economic causes alone.

We admit that there are today too many clear-cut cases of suicide resulting from pressing economic stringency to belittle that element of the picture. Proof in point is that the percentage increase among men has been higher than that among women. This is logical, in view of the fact that men have heavier financial responsibilities than women, and that the pressure of hard times affects them the most. Among white males, the rate increased 46 per cent. between the years of 1925 and 1931, as compared with a 40.5 per cent. rise among white females; in the significant year between 1929 and 1930, the increases were 16.4 per cent. and 11.8 per cent. respectively. But other things must be considered if we are to understand correctly what is going on. Suicides undoubtedly represent a group of the community who are more easily upset mentally and emotionally than the average. They are frequently persons with immature attitudes and childish methods of reacting toward life who are thrown off their balance upon slight provocation. They are over-

whelmed by conditions which other people manage to surmount readily and, in consequence, are apt to break down under the strain of relatively minor disappointments. Sometimes economic pressure is the determining cause; sometimes it is some problem of personal conflict or an inharmonious relationship with family or friends that they cannot solve. In other words, attention must be paid to the type of personality which we find associated with suicide rather than to place the entire emphasis upon purely external and material factors.

Since this is true, those who are concerned with reducing the amount of suicide have as their objective such training of individuals as will result in a more stable and integrated personality. From the community standpoint, the present grave situation suggests that activities should be undertaken to this end. The loss of valuable lives could be averted, in many instances, were help given at the proper time to those who become crushed by difficulties of one kind or another. In Vienna, in Berlin, in London and in New York, organizations are working effectively to relieve and succor those who are in distress. Many of these organizations, such as the SALVATION ARMY and anti-suicide bureaus, report that a considerable degree of success has crowned their efforts. More important, however, than salvaging those who have already broken down is the development of a wholesome mental attitude on the part of the whole people. This is a community responsibility which the schools, the associations interested in parental education, the theater, the press, the churches—in short, all of the social forces which aim to mold character —must assume. They can make a positive contribution to the general welfare by inculcating a healthy mental and emotional outlook toward life on the part of young people. The attainment of this ideal would prove the soundest preventive of suicide that there is. Those whose minds are at peace, those who have a feeling of security, those who know the value of life and regard existence realistically, those who have happy personal contacts and friends who are interested in their well-being are very unlikely to take their lives, even under the stimulus of great provocation. It is more and more the obligation of the community to develop plans to control those forces which disintegrate personality and to build up those constructive attitudes which make for wholesome, happy and contented citizens.

OUR POPULATION NOW AT REPRODUCTIVE EQUILIBRIUM

The census of 1930 seems destined to mark an epoch in the biological history of our population. We have now reached the point at which the reproductive function barely balances the mortality. To be exact, the "true" rate of natural increase of the white population of the United States figures out to a small minus fraction, that is to say, a rate of *decrease* of just about one-fifth of one per thousand per annum. This statement may seem surprising, in view of the fact that our birthrate of 18.9 per thousand in 1930 still showed an excess of 7.5 per thousand over the deathrate of 11.4. But, as has been pointed out in previous issues of this BULLETIN, appearances in this matter are deceptive. The prevailing excess of births over deaths has long been due in part, and is now wholly due, to a peculiarity or rather to an abnormality of the age distribution of our population. Owing to the higher birthrates which prevailed in the past, and also, in part, to heavy immigration in years gone by, we have a larger proportion of men and women in the reproductive ages of life than corresponds to present fecundity and mortality. In time, this excess of persons of these ages will be eliminated, and then, if fecundity and mortality continue at the present level, the birthrate will be, not 18.9 per thousand as reported in 1930, but only 15.76; the deathrate, instead of exhibiting the figure of 11.4, as in 1930, will have risen to 15.97, thus giving a net loss of .21 per thousand per annum, as indicated above.

Allowing for some degree of uncertainty in the data, and for incomplete registration of births, we may disregard this small adverse balance, and say that our fecundity and mortality in 1930 had practically reached the point of equilibrium, whereas in 1920 we still had a real margin of 5.4 per thousand in our true rate of natural increase. Since 1930, the birthrate has suffered a further marked decline to 17.8 in 1931, as we noted in last month's BULLETIN. It is true that mortality in 1932 has been most favorable, establishing a record for the first eight months of the year. But the fact that we had actually reached equilibrium two years ago, with every indication of marked further declines in fertility, and a necessarily limited prospect of improvement in mortality, lend a deep significance to the results of our computation of the true rate of natural increase, as recorded above, for our last census year. This computation confirms our conclusion recorded elsewhere, that the population of the United States is rapidly approaching its maximum, which we estimated at about 150 millions, to be reached about the year 1970.

All vital statistics for the census year 1930 are of great interest and of high value, because for census years, and for them only, are direct observational data available regarding many important characteristics of the population. For intercensal years we have to rely, in many cases, on estimates, and these become increasingly uncertain as time passes and we move further and further away from the last census. By this time most of the population data yielded by the census of 1930, and by the regular routine collection of vital statistics for that year, have become available, and certain important processes of analysis can now be approached. Among the first of these is the determination of the true rate of natural increase. We ask: How effective is the fecundity of our population as measured in the census year, in providing for a natural increase, or at least for a stationary condition of the population of the United States? The answer given above is not unexpected for those who have been following developments in this field. We are facing an actual, though as yet *very* slight deficit. The present generation is failing to reproduce its own numbers. It remains to be seen what the future developments will be.

THE HAZARDS OF COMPLICATIONS IN PREGNANCY

The reduction in the number of deaths of women from conditions associated with childbearing is largely dependent upon the prevention of puerperal complications during pregnancy. The absence of such complications will help reduce also the number of stillborn babies and the number of deaths of infants within the first week of life. These are the main conclusions drawn by the statisticians of the Metropolitan Life Insurance Company from a study of 6,117 cases that received prenatal care from the nurses of the COMMUNITY HEALTH ASSOCIATION in Boston.

The patients cared for by the Association were mainly from working-class families and are representative of the various nationalities in Boston. The age composition of the patients is very much like that of other women in Massachusetts who gave birth to children in the same year.

The number of women with puerperal complications during pregnancy was 1,361, or 22 per cent. of the total women. In 180 other cases, a medical condition complicated the pregnancy. Albuminuria, indicating that the kidneys were affected, was the chief complicating condition and constituted 40 per cent. of the total complications.

The risk of death for the mother is greatly multiplied by the presence of puerperal complications during pregnancy. Among 1,361 women with puerperal complications present during pregnancy, the deaths numbered 19, or at the rate of 14 per 1,000. This figure is between six and seven times the rate, 2.3 per 1,000, for women without these complications. The first childbirth is relatively free from hazard to the mother in the absence of complications. This is indicated by the low mortality rate of this group, 1.7 per 1,000 women. For subsequent childbirths, the women without complications in pregnancy showed the comparatively low rate of 2.5 deaths per 1,000. The first childbirth is more hazardous than subsequent ones only when complications arise during pregnancy.

In this same experience when puerperal complications occurred during pregnancy, the ratio of stillbirths was 58 in 1,000 births, but only 23 in 1,000, if complications were absent. First pregnancies, under normal conditions, are no more apt to result in a stillbirth than are later ones. It is only when complications are present that the stillbirth hazard assumes importance.

The survival of the newborn baby is also influenced by the presence of antenatal complications in the mother, even if to a lesser degree. Out of 1,000 babies born to mothers who showed puerperal complications in pregnancy, 22 died in the first week of life, as against only 18 deaths out of 1,000 babies born to mothers with no complications during pregnancy. In a normal pregnancy, the mortality of the first born is only slightly higher than for later births. However, when complications occur, the mortality hazard to the first-born infant, during the first week of life, is nearly twice that for children of a second or higher order of birth.

Adequate supervision of the mother over a sufficiently long span of the antenatal period helps to discover the complications of pregnancy in time for them to be treated. Every woman should know and appreciate the necessity of reporting early in pregnancy to a physician or to a maternity clinic in order that tragedy for herself and her baby may be averted by prompt attention to any abnormal condition that may appear during this difficult period.

NON-FATAL INJURIES IN PUBLIC PLACES

Nearly one-half of all non-fatal accidents arise out of activities in public places. This is shown by an analysis of over 10,000 injuries among Industrial policyholders of the Metropolitan Life Insurance

Company that were cared for by visiting nursing associations in 58 cities of the United States.

Pedestrians on streets were shown to be the principal victims of these public accidents, comprising nearly one-half of those injured. The next largest number of accidents occurred in the course of transportation. These two types of accidents together accounted for eight out of every ten of the injuries which were received in public places.

The automobile is the outstanding hazard in public places, producing more non-fatal injuries than any other means. In both the accidents to pedestrians and those incidental to all kinds of transportation, the automobile was the most important single factor, being responsible for 36 per cent. of pedestrian accidents, and 86 per cent. of transportation accidents. Among children, the greater ratio of automobile injuries arises while they are on the street as pedestrians, but, among adults, most injuries by automobiles occur from its use as a means of transportation. Sixty per cent. of the children injured, non-fatally, in automobile accidents were pedestrians; but only 30 per cent. of the adults injured by this means were pedestrians. The number of pedestrians who were injured by automobiles was 816, of which number, 302, or 37 per cent., were children under 15. Of the total injured in transportation accidents, only 195 were children, or 15 per cent. of the total.

Although the automobile is the greatest single factor in these accidents in public places, we must not lose sight of the importance of other means of injury; for, after all, 55 per cent. of all non-fatal public injuries are in no way associated with the use of motor vehicles. Prominent among these other injuries are those arising out of sport or at play (8 per cent.); at school (3.4 per cent.); in public buildings (3.3 per cent.); and in other public places (5.1 per cent.).

A separate analysis of the 2,610 injuries in which the automobile was not involved shows that over one-half (51 per cent.) were due to falls, 12 per cent. to non-motor driven vehicles, 12 per cent. to cuts and 5 per cent. to burns. Falls were responsible for more injuries on streets, in schools and in public buildings than all other types of accidents combined, and, in addition, for 40 per cent. of the injuries received in the course of sport and play. Cuts play a prominent part in accidents to pedestrians as well as in those received at school and in sport and play. In this last group, cuts caused one-sixth of the injuries. Burns are prominent in connection with accidents in

public buildings, while accidents due to animals and to firearms play minor roles.

The following table shows the number of injuries in the several types of public accidents, together with the per cent. due to each type.

Non-Fatal Injuries* in Public Places

Place of Occurrence	Number of Injuries	Per Cent. of Total
All Public Places	4,740	100.0
Street (Pedestrian)	2,281	48.1
Transportation	1,523	32.1
Sport and play	377	8.0
School	159	3.4
Public building	158	3.3
Other public places	242	5.1

*Cared for by Visiting Nurse Associations in 58 cities of the United States.

HEALTH RECORD FOR AUGUST, 1932

Health conditions in August among Metropolitan Industrial policyholders were generally favorable, although the deathrate, 7.8 per 1,000 persons, is not quite as low as the exceptional August figures for the last three years. Since 1920, the August deathrate, has ranged between a minimum of 7.4 and a maximum of 8.5. The mortality rate for the current month is under the average for August.

For the eight elapsed months of 1932 combined, the general mortality rate among the Industrial policyholders has been at the lowest figure ever registered for a similar period. At the end of August, the cumulative rate stands at 8.8 per 1,000. This figure is 3.3 per cent. lower than the corresponding figure for last year. Improvement in mortality has been observed in all sections of the United States and Canada. West of the Rockies the rate for the eight months was 6.3 per 1,000, as against 6.4 per 1,000 in 1931. In the rest of the United States, the rate for the policyholders was 9.0, as against 9.4 in 1931. In Canada, the rate dropped to 7.9 in 1932, from 8.2 in 1931.

Heart disease continues to be the leading cause of death among the policyholders. In every one hundred deaths so far this year, 18 were the result of heart disease. Cancer ranks second numerically, but its toll is little more than one-half that from heart disease. For each of these conditions, mortality has increased since last year: heart disease, 3.8 per cent. and cancer, 8.9 per cent.

Tuberculosis is the third important cause of death among Industrial policyholders this year. Last year its relative rank was fourth, pneumonia taking precedence by reason of epidemic conditions. The tuberculosis mortality rate has been declining for many years and is at a lower rate now than ever before. In the brief span of one year, the rate has declined 7 per cent. The improvement has been most marked for colored policyholders, among whom, during the first six months of 1932, the rate declined nearly 15 per cent. from last year's figure. Among white insured persons, the improvement in mortality from tuberculosis has amounted to approximately 5 per cent.

Diphtheria, whooping cough, scarlet fever and measles have each shown lower mortality so far in 1932 than in 1931. The largest decline is shown for measles, which is the least important of the four, this year.

So far, 1932 has been fairly free from outbreaks of respiratory disease. The mortality from influenza and pneumonia combined is 18.2 per cent. less for the eight-month span than last year's figure. This has been the greatest individual factor in producing the exceptionally low deathrate of 1932, accounting for about two-thirds of the improvement in mortality this year. Lower rates have also been recorded this year for typhoid fever, diarrheal diseases, puerperal conditions, homicides, automobile and other accidents.

In addition to the slight increase in heart disease and the more significant increase in cancer, increases of greater or less magnitude are recorded for diabetes, cerebral hemorrhage, Bright's disease and suicide.

The generally favorable mortality conditions observed among the Industrial policyholders prevail also in the general population. This is indicated by the remarkably low rate for August of 9.3 deaths per 1,000 population in the large cities of the United States. For the eight months of 1932 combined, the rate is only 11.4, as against 12.3 last year and also two years ago. Current morbidity from certain reportable diseases is available for part of the general population. Compared with August, 1931, there were more cases this month of diphtheria, influenza, scarlet fever and typhoid fever, but a smaller number of cases of measles, poliomyelitis and smallpox. Diphtheria cases reported from 28 states numbered 2,033 in the first four weeks of August, an increase compared with the 1,859 reported in August, 1931. Reports from 44 states show 3,564 cases of scarlet fever, as against 3,200 last August. In the like number of states, typhoid

fever cases rose to 3,933 from 3,511 last year. Eight states reported 998 cases of influenza; last August, only 477.

Measles cases dropped this August to 3,512 from 4,095 last year (22 states); poliomyelitis from 3,799 down to only 691 (45 states); and smallpox from 538 to 193 (46 states).

Some of the recent activities of public health interest are the following:

The UNITED STATES PUBLIC HEALTH SERVICE and the ROCKEFELLER FOUNDATION are giving financial assistance to continue the health work on a full time basis in five counties in the State of Ohio. The SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH has undertaken a one year survey of heart disease morbidity. The AMERICAN PUBLIC HEALTH ASSOCIATION is to conduct its first Institute on Health Education immediately preceding the annual meeting, October 24th to 27th. The purpose of this Institute is to provide instruction in the content and methodology of health education to persons actively engaged in this line of work. The MILBANK MEMORIAL FUND is cooperating with the UNITED STATES PUBLIC HEALTH SERVICE in a study of public health administration in two Virginia counties. *The American Journal of Cancer* is offering, free of charge, a series of motion picture films on cancer, to be shown before medical groups.

The following table shows the mortality among Industrial policyholders for August, 1932; July, 1932, and August, 1931, together with the cumulative rates for the first eight months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Deathrates* per 100,000 for Principal Causes Premium-Paying Business in Industrial Department (Annual Basis)

MONTHS OF AUGUST, 1932; JULY, 1932, AND AUGUST, 1931

CAUSES OF DEATH	ANNUAL RATE PER 100,000 LIVES EXPOSED*				
	August 1932	July 1932	August 1931	Cumulative January to August	
				1932	1931
TOTAL—ALL CAUSES	776.4	755.2	737.1	881.7	911.7
Typhoid fever	2.6	1.6	3.2	1.4	1.6
Measles	.5	1.1	.7	2.3	4.2
Scarlet fever	1.4	1.3	1.7	3.3	3.6
Whooping cough	3.1	2.7	4.2	3.5	3.6
Diphtheria	1.9	2.9	1.9	4.0	4.1
Influenza	3.9	6.3	4.6	20.9	26.7
Tuberculosis (All forms)	65.6	69.5	63.6	73.4	78.6
Tuberculosis of resp'y system	58.1	60.9	55.8	64.7	69.4
Cancer	88.8	81.7	76.3	89.7	82.4
Diabetes mellitus	19.9	17.5	16.9	23.0	21.2
Cerebral hemorrhage	52.8	55.9	49.4	63.8	62.8
Organic diseases of heart	135.2	141.2	118.5	159.7	153.9
Pneumonia (All forms)	28.7	33.1	27.6	71.7	86.5
Other respiratory diseases	7.6	6.9	7.4	9.8	11.3
Diarrhea and enteritis	17.8	11.7	27.2	9.9	13.1
Bright's disease (Chronic nephritis)	60.6	59.9	52.0	69.5	68.0
Puerperal state	10.3	10.2	9.1	10.8	11.4
Suicides	11.3	10.0	9.1	11.0	9.8
Homicides	6.7	4.3	7.6	6.1	6.8
Other external causes (excluding suicides and homicides)	69.8	61.6	70.4	55.3	61.4
Traumatism by automobiles	21.1	18.9	22.7	18.5	20.5
All other causes	187.9	175.8	185.4	192.6	200.7

*All figures in this table include insured infants under one year of age. The rates for 1932 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

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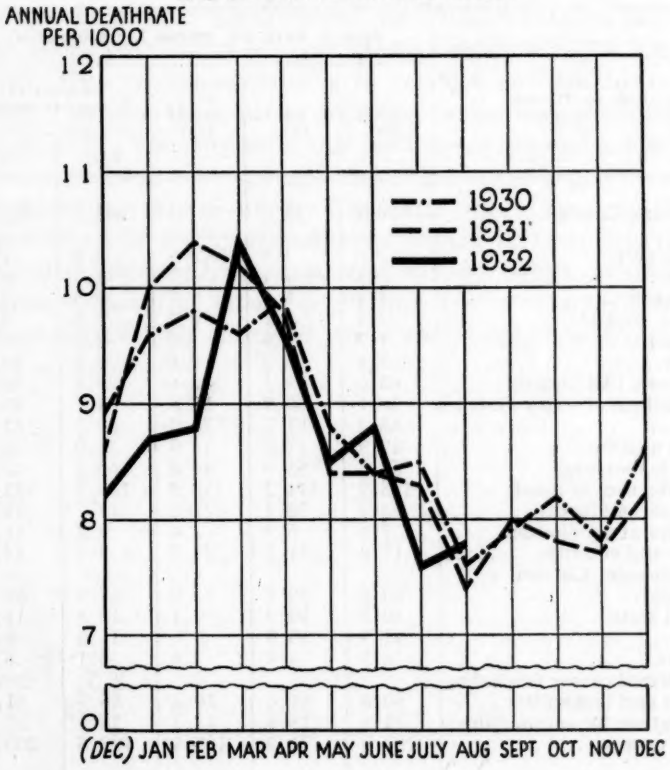

1930	9.6	9.8	9.6	9.9	8.8	8.4	8.5	7.6	7.9	8.2	7.8	8.6
1931	10.0	10.4	10.2	9.8	8.4	8.4	8.3	7.4	8.0	7.8	7.7	8.2
1932*	8.7	8.8	10.4	9.6	8.5	8.8	7.6	7.8				

* *Rates for 1932 are provisional*

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